

CLAIM SUMMARY DOCUMENT

Claims 1-49 (Canceled)

Claim 50 (Currently amended) An inductively coupled plasma processing system, comprising:

a plasma processing chamber;

a substrate holder supporting a substrate having a periphery within said processing chamber, the substrate holder including an electrode;

an electrically-conductive coil disposed outside said processing chamber;

a process gas distribution system for introducing a process gas into said processing chamber, the process gas distribution system comprising injectors at least some of which ~~which~~ direct the process gas along axes that intersect an exposed surface of the substrate at an acute angle, all each ~~all~~ of the injectors of the process gas distribution system being spaced outwardly from the periphery of the substrate;

an RF energy source which inductively couples RF energy into the processing chamber to energize the process gas into a plasma state,

wherein the substrate holder is maintained at a selected temperature during deposition of a material on the substrate by plasma-enhanced chemical vapor deposition.

Claim 51 (Previously added) The system of Claim 50, wherein the process gas comprises a silicon-containing reactant gas selected from the group consisting of SiH_4 , SiF_4 , Si_2H_6 , TEOS, TMCTS, and mixtures thereof.

Claim 52 (Previously added) The system of Claim 50, wherein the process gas comprises a reactant gas selected from the group consisting of H_2 , O_2 , N_2 , NH_3 , NF_3 , N_2O , and NO , and mixtures thereof.

Claim 53 (Previously added) The system of Claim 50, wherein the process gas comprises a reactant gas selected from the group consisting of boron-containing gas, phosphorous-containing gas, and mixtures thereof.

Claim 54 (Previously canceled)

Claim 55 (Previously amended) The system of Claim 50, wherein the process chamber is a vacuum chamber maintained at about 1 mTorr to about 30 mTorr.

Claim 56 (Previously amended) The system of Claim 50, wherein the substrate holder comprises a ceramic material and the electrode is buried within the ceramic material.

Claim 57 (Previously amended) The system of Claim 50, wherein the injectors include orifices, each of the orifices orient the process gas along an axis of injection which intersects an exposed surface of the substrate at an acute angle.

Claim 58 (Currently amended) An inductively coupled plasma processing system, comprising:

a plasma processing chamber;

a substantially planar electrically-conductive coil;

a substrate support supporting a substrate having a periphery within the processing chamber;

a process gas distribution system which provides process gas into the processing chamber, the process gas distribution system including injectors at least some of which direct the process gas along axes that intersect an exposed surface of the substrate at an acute angle, all each of the injectors of the process gas distribution system being spaced outwardly from the periphery of the substrate; and

an RF energy source which inductively couples RF energy into the processing chamber to energize the process gas into a plasma state;

wherein the substrate holder is maintained at a selected temperature during deposition of a material on the substrate by plasma-enhanced chemical vapor deposition.

Claim 59 (Previously amended) The system of Claim 50, wherein at least some of the injectors include an orifice oriented relative to the axis thereof to direct the process gas in an upward direction away from the substrate.

Claim 60 (Previously amended) The system of Claim 50, wherein the process gas distribution system comprises a primary gas ring that directs the process gas toward the substrate.

Claim 61 (Previously amended) The system of claim 60, wherein the process gas distribution system further comprises a secondary gas ring, the primary gas ring is between the secondary gas ring and the substrate holder.

Claim 62 (Previously amended) The system of Claim 60, wherein the process gas distribution system comprises injectors connected to the primary gas ring, at least some of the injectors connected to the primary gas ring direct the process gas along axes that intersect an exposed surface of the substrate at an acute angle.

Claim 63 (Previously amended) The system of Claim 62, wherein some of the injectors include an orifice oriented relative to the axis thereof to direct the process gas in an upward direction away from the substrate and toward the dielectric window.

Claim 64 (Canceled)

Claim 65 (Currently amended) An inductively coupled plasma processing system, comprising:

- a plasma processing chamber;

- a substrate support supporting a substrate within the processing chamber, the substrate having a periphery;

- an electrode operable to heat the substrate support;

a gas supply for introducing a process gas into the processing chamber, the gas supply including injectors at least some of which direct the process gas along axes that intersect an exposed surface of the substrate at an acute angle, all each of the injectors of the gas supply being spaced outwardly from the periphery of the substrate; and

an RF energy source inductively coupling RF energy into the processing chamber to energize the process gas into a plasma state,

wherein the electrode is maintained at a selected temperature during deposition of a material on the substrate by plasma-enhanced chemical vapor deposition.

Claim 66 (Previously amended) The system of Claim 65, wherein the substrate support comprises a ceramic material and the electrode is buried within the ceramic material comprising the substrate support.

Claim 67 (Previously amended) The system of Claim 65, further comprising an RF bias power source connected to the electrode, wherein the RF bias power source is operable to regulate a level of RF bias applied to the substrate so as to control the substrate temperature.

Claim 68 (Previously added) The system of Claim 65, wherein the gas supply comprises a primary gas ring that directs the process gas toward the substrate.

Claim 69 (Previously added) The system of claim 68, wherein the gas supply further comprises a secondary gas ring, the primary gas ring is between the secondary gas ring and the substrate holder.

Claim 70 (Previously added) The system of Claim 68, wherein the gas supply further comprises injectors connected to the primary gas ring, the injectors direct the process gas along axes that intersect an exposed surface of the substrate at an acute angle.

Claim 71 (Previously added) The system of Claim 50, wherein a plurality of gas flows overlap each other in a plane parallel to an exposed surface of the substrate.